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(54) Title: COSMETIC STICKS CONTAINING MICROCAPSULES			
(57) Abstract			
A cosmetic stick having a base, including a solidifying agent and a volatile solvent, and microencapsulated pigment particles. The outer shell of the microencapsulated pigment particles is softened but not destroyed by the volatile solvent.			

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COSMETIC STICKS CONTAINING MICROCAPSULES

The present invention relates generally to a cosmetic stick containing a microencapsulated ingredient. More particularly, this invention 5 relates to a pigmented cosmetic stick having an encapsulated pigment or other encapsulated active ingredient within a volatile solvent base. Such a stick having an encapsulated pigment within a volatile solvent base provides enhanced color payoff 10 and improved feel and smoothness on application to the skin.

BACKGROUND OF THE INVENTION

Encapsulated pigments for use in cosmetic 15 compositions are known in the art, as are encapsulated oils and other encapsulated active ingredients. U.S. Patent No. 5,382,433, owned by the assignee of the present invention, provides a long wearing cosmetic composition having coacervated 20 pigment microcapsules incorporated into a compatible anhydrous base.

As explained in that patent, prior art cosmetics having encapsulated pigments tended to feel rough and gritty due to the presence of the residual 25 microcapsule material in the cosmetic. Attempts to produce a smoother product by mixing the encapsulated pigments with oils or emollients were unsuccessful, because the resulting dispersions caused the microcapsules to weaken and rupture too easily during 30 handling. Moreover, these formulations provided an insufficient concentration of pigment.

Volatile solvent based cosmetics account for a sizable and growing portion of the cosmetic market. Yet, until now, volatile solvents were not thought to 35 be compatible with cosmetic microcapsules, since it was believed that the volatile solvents would

completely dissolve the microcapsules and render them useless.

It has surprisingly been found that  
microencapsulated pigments formed according to the  
5 such methods as those disclosed in U.S. Patent No.  
5,382,433, discussed above, can successfully be  
incorporated into cosmetic bases containing volatile  
solvents, without sacrificing the performance of the  
microcapsules to deliver high concentrations of  
10 pigment and to improve color payoff and wear  
properties. Moreover, it has been found that these  
compositions have superior feel on application, and  
are not rough or gritty.

15

#### SUMMARY OF THE INVENTION

Against the foregoing background, it is a  
primary object of the present invention to provide a  
cosmetic composition having microcapsules, containing  
pigment or other ingredients, in a volatile solvent  
20 base.

It is another object of the present invention to  
provide such a composition that enhances wear, color  
payoff and pigment concentration.

It is still another object of the present  
25 invention to provide such a composition that is  
smooth and non-gritty on application to the skin.

It is yet another object of the present  
invention to provide the foregoing benefits in a  
solid or semi-solid cosmetic.

30 To the accomplishment of the foregoing objects  
and advantages, the present invention, in brief  
summary, comprises a cosmetic stick having a base,  
including a solidifying agent and a volatile solvent,  
and a microencapsulated pigment particle or particles  
35 (referred to herein as particles), wherein the outer

shell of the microencapsulated pigment particles is softened but not destroyed by the volatile solvent.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

5       The preferred cosmetic compositions of the present invention have a microencapsulated ingredient incorporated into a volatile solvent-based solid or semi-solid base. Preferably, the microencapsulated ingredient is a pigment. This microencapsulated  
10      pigment is then incorporated into a cosmetic base containing a volatile solvent, without sacrificing the performance of the microcapsule or microcapsules (referred to herein primarily as microcapsules) to deliver a high concentration of pigment. In  
15      addition, the resulting cosmetic has improved color payoff and wear properties. Moreover, it has been found that the composition has superior feel on application.

While a microencapsulated pigment is preferred  
20      for use in the composition of the present invention, it is apparent that microcapsules containing other cosmetically useful ingredients, such as emollient oils, sunscreens, healing or treatment agents, vitamins, and the like, would also come within the  
25      scope of the present invention. The microcapsules can be added alone or in combination with another microencapsulated ingredient to the cosmetic base. The cosmetic composition containing these ingredients is not gritty or rough, and provides improved  
30      ingredient payoff and wear.

In the prior art, the color component is typically dispersed throughout a suitable anhydrous base or vehicle. The pigmented solid particles give the cosmetic its characteristic color, texture or  
35      sheen. In contrast with such freely dispersed

pigments, a microencapsulated pigment provides benefits such as longer wearing color and renewability without reapplication. For example, normal activities such as talking, smiling and eating 5 cause microcapsules within a lipstick that has been applied to the lips to rupture and dispense color long after initial application.

Any inorganic or organic pigment or colorant approved for use in cosmetics is suitable for use in 10 the present invention. Preferred pigments include the lakes, iron oxides, titanium dioxide and hydrophobic dyes. The microencapsulated pigments may be formed according to the methods disclosed in the art, such as those disclosed in U.S. Patent No. 15 5,382,433, discussed above and incorporated herein by reference, which sets forth several preferred methods of encapsulation.

Of those methods, the coacervation method is more preferably employed to encapsulate the pigment 20 or other ingredient or ingredients of the present invention. As disclosed in greater detail in U.S. Patent No. 5,382,433, this method involves first dispersing the color component or pigmented solid in a liquid carrier, preferably a nonvolatile solvent. 25 The liquid dispersion is emulsified, and a complex of colloidal material is added to the external phase. The colloidal material is then reacted to form a deposit or shell on and around each droplet. The temperature of the solution is then lowered in order 30 to gel and harden the shell wall material. Further curing of the shell wall material by chemical agents can also be performed. The preferred colloidal materials for use in this preferred process include gelatin and gum arabic.

A stable, dry, free flowing powder is formed. The microcapsules making up this powder are preferably from about 2 to about 20 microns in diameter. However, due to the softening effects of 5 the composition of the present invention, microcapsules of greater size can be used without an unacceptable feeling of roughness or grittiness on application of the cosmetic composition to the skin. The dimensions of the microcapsules and their cores 10 can be controlled by manipulating the reaction conditions, as is known in the art. Additional methods of encapsulation can also be used, such as additional in situ polymerization reactions and polycondensation encapsulation techniques.

15 The microcapsule powder can then be incorporated into the cosmetic base. The microcapsules are preferably present in the cosmetic composition at up to about 60% by weight of the base vehicle, with an amount in the range of about 2% to about 20% by 20 weight being more preferred.

The present invention contemplates the use of a cosmetic base containing a volatile solvent. Such a volatile solvent is typically used as a quick-drying carrier for a film-forming agent such as sucrose 25 acetate isobutyrate. The volatile solvent remains in the cosmetic composition until it is applied to the skin, hair or other surface. The volatile solvent then rapidly evaporates, leaving the remaining cosmetic ingredients, preferably entrapped within a 30 cosmetic film, on the skin or other surface.

Apparently, the volatile solvent in the base softens or plasticizes the outer shell of the microcapsules in situ. This minimizes or eliminates the typical gritty feel of the microcapsule material. 35 Moreover, it is believed that the solidifying agent

that binds the semi-solid or solid composition acts to maintain the structure of the microcapsule, and thus lock the microcapsule's contents in place and enable the microcapsule to remain functional.

5 Any cosmetically acceptable volatile solvent can be used in the cosmetic compositions of the present invention. Preferred volatile solvents for use in the present invention include volatile hydrocarbons, such as isododecane and other isoparaffins, and  
10 volatile silicones such as cyclomethicone.

Any cosmetically acceptable solidifying agent can be used in the solid or semi-solid bases of the present invention. The solidifying agent is preferably a wax. Preferred waxes for use in the  
15 cosmetic compositions of the present invention include candelilla, beeswax, microcrystalline petroleum wax, paraffin wax, ceresine wax, ozokerite and carnauba. Moreover, these waxes can also function as film formers.

20 In addition, other binders and structuring agents can be used in these compositions as solidifying agents, provided they give support to the cosmetic and to the softening microcapsules therein.

Cosmetic compositions according to the present  
25 invention are preferably in the form of wax-based cosmetic sticks, such as lipsticks, concealers, or stick eyeshadows. Other solid or semi-solid compositions, such as foundations, blushes and potted lip colors, can also be used.

30 A preferred lipstick composition according to the following invention is set forth in Example 1.

Example 1

LIPSTICK

35

Encapsulated pigment

Wt. %

1.30

	Paraffin wax	8.00
	Ceresine wax	4.20
	Ozokerite	2.00
	Diisostearyl fumarate	11.00
5	Lauryl PCA	0.80
	Ethylhexyl-methoxycinnamate	3.20
	Benzophenone-3	1.00
	Stearyl Dimethicone	2.10
	Pigments, pearls and colorants	10.4
		1.7
10	Powders	4.00
	Sucrose Acetate Isobutyrate	
	Liposome Vitamin A/C/E/Beta	
	Carotene Conc.	0.05
	Jojoba oil - microencapsulated	0.05
15	Isododecane	4.00
	Cyclomethicone	45.70
	Methylparaben	0.30
	Propylparaben	0.20

20

This lipstick is formulated by processing methods known in the art. The resulting lipstick provides intense color payoff, smooth application, and long lasting and renewable color.

25

The invention having been thus described with particular reference to the preferred forms thereof, it will be obvious that various changes and modifications may be made therein without departing from the spirit and scope of the invention as defined

30 in the appended claims.

What we claim is:

1. A cosmetic composition comprising a volatile solvent and a microcapsule.

5

2. The cosmetic composition of claim 1, further comprising a solidifying agent.

3. The cosmetic composition of claim 1,  
10 wherein said microcapsule contains a pigment.

4. The cosmetic composition of claim 1,  
wherein said microcapsule contains an ingredient  
selected from the group consisting of emollient oils,  
15 sunscreens, healing agents, treatment agents,  
vitamins, or a combination thereof.

5. The cosmetic composition of claim 3,  
wherein said microcapsule is formed by coacervation.

20

6. The cosmetic composition of claim 1,  
wherein said cosmetic composition is a solid stick.

7. The cosmetic composition of claim 1,  
25 wherein said cosmetic composition is a semi-solid.

8. The cosmetic composition of claim 1,  
wherein said microcapsule has an average diameter  
from about 2 to about 20 microns.

30

9. The cosmetic composition of claim 1,  
further comprising a film former.

10. The cosmetic composition of claim 9,  
wherein said film former is sucrose acetate  
isobutyrate.

5       11. A cosmetic stick comprising:  
          a base including a solidifying agent and a  
          volatile solvent; and  
          a plurality of microencapsulated pigment  
          particles, said particles having an outer shell;  
10       wherein said outer shell of said  
          microencapsulated pigment particles is softened but  
          not destroyed by said volatile solvent.

12. The cosmetic stick of claim 11, wherein  
15       said solidifying agent supports said outer shell of  
          each of said plurality of microencapsulated pigment  
          particles.

13. The cosmetic stick of claim 11, wherein  
20       said solidifying agent comprises a wax.

14. The cosmetic stick of claim 11, wherein  
          said outer shell of each of said plurality of  
          microencapsulated pigment particles comprises a  
25       material selected from the group consisting of gum  
          arabic, gelatin and a mixture thereof.

15. The cosmetic stick of claim 11, wherein  
          said outer shell of each of said plurality of  
30       microencapsulated pigment particles is formed by  
          coacervation.

16. The cosmetic stick of claim 11, wherein  
          each of said plurality of microencapsulated pigment  
35       particles further includes a nonvolatile solvent.

17. The cosmetic stick of claim 11, wherein  
said volatile solvent is selected from the group  
consisting of isoparaffins and volatile silicones.

5

18. The cosmetic stick of claim 11, further  
comprising a film former.

19. The cosmetic stick of claim 18, wherein  
10 said film former is sucrose acetate isobutyrate.

**AMENDED CLAIMS**

[received by the International Bureau on 12 October 1998 (12.10.98);  
original claims 1-19 replaced by amended claims 1-22 (3 pages)]

1. A cosmetic composition comprising a base  
having a volatile solvent, and a microcapsule having  
5 a pigmented particle therein.

2. The cosmetic composition of claim 1,  
further comprising a solidifying agent.

10 3. The cosmetic composition of claim 1,  
wherein said microcapsule contains a pigment.

15 4. The cosmetic composition of claim 1,  
wherein said microcapsule contains an ingredient  
selected from the group consisting of emollient oils,  
sunscreens, healing agents, treatment agents,  
vitamins, or a combination thereof.

20 5. The cosmetic composition of claim 3,  
wherein said microcapsule is formed by coacervation.

6. The cosmetic composition of claim 1,  
wherein said cosmetic composition is a solid stick.

25 7. The cosmetic composition of claim 1,  
wherein said cosmetic composition is a semi-solid.

30 8. The cosmetic composition of claim 1,  
wherein said microcapsule has an average diameter  
from about 2 to about 20 microns.

9. The cosmetic composition of claim 1,  
further comprising a film former.

10. The cosmetic composition of claim 9,  
5 wherein said film former is sucrose acetate  
isobutyrate.

11. A cosmetic stick comprising:  
a base including a solidifying agent and a  
10 volatile solvent; and  
a plurality of microencapsulated pigment  
particles, said particles having an outer shell;  
wherein said outer shell of said  
microencapsulated pigment particles is softened but  
15 not destroyed by said volatile solvent.

12. The cosmetic stick of claim 11, wherein  
said solidifying agent supports said outer shell of  
each of said plurality of microencapsulated pigment  
20 particles.

13. The cosmetic stick of claim 11, wherein  
said solidifying agent comprises a wax.

25 14. The cosmetic stick of claim 11, wherein  
said outer shell of each of said plurality of  
microencapsulated pigment particles comprises a  
material selected from the group consisting of gum  
arabic, gelatin and a mixture thereof.

30 15. The cosmetic stick of claim 11, wherein  
said outer shell of each of said plurality of

microencapsulated pigment particles is formed by coacervation.

16. The cosmetic stick of claim 11, wherein  
5 each of said plurality of microencapsulated pigment  
particles further includes a nonvolatile solvent.

17. The cosmetic stick of claim 11, wherein  
said volatile solvent is selected from the group  
10 consisting of isoparaffins and volatile silicones.

18. The cosmetic stick of claim 11, further  
comprising a film former.

15 19. The cosmetic stick of claim 18, wherein  
said film former is sucrose acetate isobutyrate.

20. The cosmetic composition of claim 1, wherein  
said microcapsule is a plurality of microcapsules.

20 21. The cosmetic composition of claim 20,  
wherein said plurality of microcapsules are up to  
about 60% by weight of said base.

25 22. The cosmetic composition of claim 20,  
wherein said plurality of microcapsules are about 2%  
to about 20% by weight of said base.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/06071

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(6) :A61K 7/00

US CL :424/401, 63, 489

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/401, 63, 64

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,626,856 A (BERNDT) 06 May 1997, col. 5, lines 55-61, col. 4, lines 10-24.	1-19
Y,P	US 5,665,778 A (SEMERIA et al) 09 September 1997, col. 7, lines 48-53, col. 9, lines 33, col. 16, example J, claim 12.	1-19
Y	US 5,585,090 A (YOSHIOKA et al) 17 December 1996, see entire document.	1-19

 Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	*T*	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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